

Alpinia fax B.L. Burtt *et* R.M. Sm. (Zingiberaceae) – a new record for India

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Abstract

Alpinia fax B.L. Burtt *et* R. M.Sm., a native of Sri Lanka is reported for the first time from India. Detailed description, illustrations and other relevant notes are provided.

INTRODUCTION

The genus *Alpinia* Roxb. belongs to the tribe Alpinieae A. Rich. of the subfamily Alpinioideae Link. of Zingiberaceae (Kress *et al.*, 2002). It forms the largest genus of the family and comprises about 250 species. In India, the genus is represented by 11 species, of which two viz., *A. manii* Baker and *A. smithiae* Sabu *et* Mangaly are endemic, and in South India by eight (Mangaly & Sabu, 1992). With the recognition of the present species, the number of species of *Alpinia* recorded from South India will rise to nine.

During the course of revisionary studies on Indian Zingiberaceae, we came across an interesting species of *Alpinia* from the Periyar Tiger Reserve of Kerala state in South India. It is common in the evergreen forest of “Deviar mettu” area at an altitude of 1450 m. These robust plants having radical inflorescence produced at the tip of a long peduncle with an involucre of sterile bracts, resembled *A.abundiflora* B.L. Burtt *et* R.M. Sm. Detailed studies revealed it to be *A. fax* B.L. Burtt *et* R.M. Sm., a native of Sri Lanka. Hence, the present collection forms a new distributional record and an addition to the ginger flora of India.

Alpinia fax B. L. Burtt & R. M. Sm., Notes Roy. Bot. Gard. Edinburgh 34: 177. 1975 & in Dassanayake & Fosberg, Rev. Handb. Fl. Ceylon 4: 514. 1983; R. M. Sm., Notes Roy. Bot. Gard. Edinburgh 34: 149-182. 1975 & Edinburgh J. Bot. 47(1): 1-75. 1990. (Fig. 1).

Elettaria involucrata Thw., Enum. Pl. Zeyl. 319.1864, non *Alpinia involucrata* Griff., Notul. Pl. Asiat. 3: 422. 1851.

Amomum involucratum (Thw.) Trimen, Cat. 92. 1885 & Handb. Fl. Ceylon 44: 250. 1898, *excl. descr.*; Baker in Hook. f., Fl. Brit. India 6: 233. 1892; K. Schum. in Engler, Pflanzenr. IV(46): 228. 1904.

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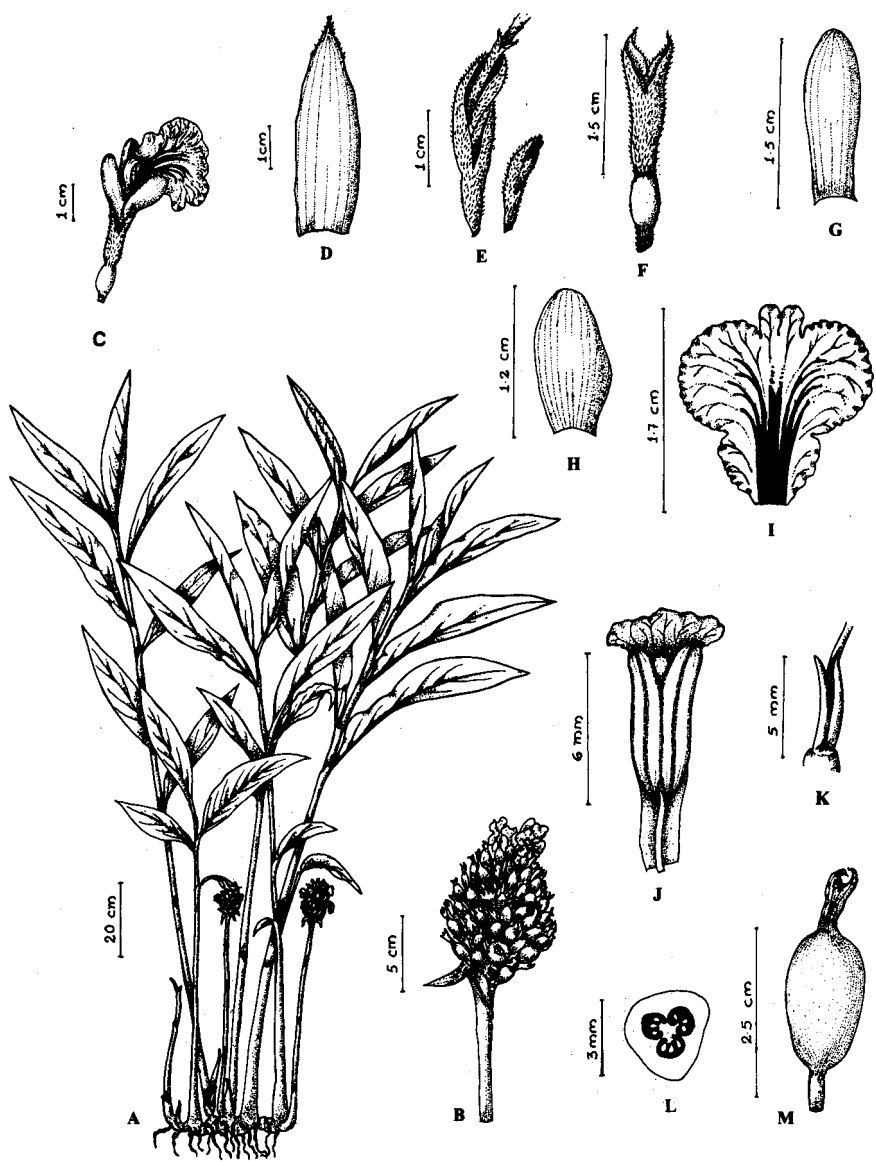


Fig. 1. *Alpinia fax* B. L. Burtt *et* R. M. Sm. A. Habit; B. Inflorescence; C. Single flower; D. Bract; E. Bracteoles; F. Ovary with calyx; G. Lateral corolla lobe; H. Dorsal corolla lobe; I. Labellum; J. Stamen and apical portion of style with stigma; K. Epigynous glands; L. Ovary - C.S.; M. Fruit with persistent calyx.

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Type: Sri Lanka, Central Province. C.P.3019 (K!, BM, CGE & CAL!)

Perennial rhizomatous herbs; leafy shoot 2-3 m high. Leaves 7-8, sessile; lamina 50-55 x 12-13 cm, lanceolate, acuminate, attenuate at base, upper surface glabrous, lower surface densely pubescent along the midrib. Ligule 1 cm long, greenish, apex rounded, glabrous. Inflorescence a radical spike; peduncle 60-65 cm long, reddish-brown, densely pubescent, covered with coriaceous bracts. Bracts 15-17 x 2.5-3 cm, densely pubescent towards the tip. Spike 11-15 x 4.5-6 cm, elongates considerably with age, fertile bracts smaller, 2-6 x 1-1.3 cm, gradually becoming smaller towards the tip, pubescent towards the apex. Each bract subtends a cincinni of 4-5 flowers; Bracteoles tubular, creamy white, splitting to the base as the cincinnus matures, keeled, densely pubescent, tubular towards the base (no truly open bracteoles seen) in each cincinnus the outermost bracteole 1.5-2 x 0.8-1 cm, splits open to about three-fourth of its length, and the innermost 0.6-1.1 x 0.3-0.5 cm splits open to about one-fourth of its length. Flower white, longer than the bracts, 3-5 cm long, 3-4 flowers open at a time. Calyx 1.2-1.5 cm long, white, bidentate, persistent, densely pubescent. Corolla white, tube 0.8-1 cm long, puberulous, dorsal lobe ca. 1.2 x 0.7 cm, broadly ovate, glabrous, lateral lobe ca. 1.5 x 0.5 cm, slightly longer than the dorsal lobe, glabrous. Labellum ca. 1.7 x 1.7 cm orbicular, obscurely three-lobed, white with purple red lines radiating from the center, margin crumpled; lateral staminodes obsolete, reduced to two pointed structures each about 0.3 cm long. Filament ca. 0.3 cm long, white, anther thecae ca. 0.5-0.6 cm long, dehiscence by lateral slits, anther crest ca. 0.5 x 0.2 cm white. Ovary ca. 0.8-1 x 0.3 cm, ovate, trilocular, ovules numerous, placentation axile, stigma glandular, yellow, ciliate. Epigynous glands two, ca. 0.6 cm long, needle-shaped, creamy white. Capsule 2.5 x 1 cm, light red, obovate, glabrous with persistent calyx. Seeds 0.5 x 0.5 cm, bean-shaped.

Flowering and fruiting: January - May.

Ecology: *Alpinia fax* grows along the margin of steep cuttings in wet evergreen forest.

Distribution: Thwaites collected the type specimen of this species from Central province, Sri Lanka. The present collection of this species from Periyar Tiger Reserve, Kerala is a record of its extended distribution to India.

Specimens examined: INDIA, **Kerala:** Idukki District, Periyar Tiger Reserve, Deviar mettu 1450 m, 21 February, 2003, *Prasanthkumar* 86134 (CALI); Maddalam kotti thodu, 1300 m, 20 May, 1994, *Jomy Augustine* 13747 (CALI).

Vernacular name: “*Vayi nocki elam*” (Mannan Tribe), refers to its mature fruits, which on dehiscence resemble open mouth.

Uses. The Mannan tribes use seeds of this plant for the treatment of stomach ailments.

Notes. This species was first established by Thwaites (1864) under the name *Elettaria involucreata*. Burt and Smith (1975) transferred it to the genus *Alpinia*, on account of the

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bracts subtending a cincinni. As the specific epithet ‘*involucratum*’ cannot be retained in the genus *Alpinia* since this will become a latter homonym of *A. involucrata* Griff. (1851); a new epithet ‘*fax*’ and named the species as *Alpinia fax* by Burt and R.M. Smith, which is the type species of the sect. *Fax*.

The colour of the Labellum recorded by various workers had been in a state of flux since the very beginning. In the protologue the flower colour is given as ‘pale yellowish brown’ without giving any reference to the colour of the labellum as in many of the older descriptions. The detailed description provided by the Trimen (1885) based on the live collections from Sri Lanka mentioned the colour of the labellum as ‘white with pink stripes’. Recently, Burt and Smith (1975), have mentioned the colour of the labellum as ‘uniform white’. The present collection agrees with Trimen’s description of the labellum as ‘white with pink stripes’.

This species can be easily distinguished from *A. abundiflora* by its sessile leaves, involucre of sterile, oblong lanceolate bracts, flowers longer than the bracts, densely pubescent nature of bracts, bracteoles, calyx, and corolla tube, obscurely three-lobed broader labellum, gradual elongation of the spike with maturity.

A. fax belongs to the section *Fax* R.M. Sm. of the subgenus *Alpinia* R.M. Sm. (Smith, 1990). The conspicuous involucre of sterile bracts, which surrounds the inflorescence, is a prominent characteristic of the sect. *Fax*. This section includes three species viz., *A. abundiflora*, *A. fax*, and *A. rufescens* (Thw.) K. Schum. (known only from the type). The former two have their distribution in South India and Sri Lanka, whereas the latter is endemic to Sri Lanka.

All the three species of this section were originally included under the genus *Elettaria* (Thwaites, 1864). Later on, all of them were transferred to the genus *Amonum* by Trimen (1898), and subsequently to the genus *Alpinia* (Burt & Smith, 1975).

A. fax resembles *A. abundiflora* in general vegetative morphology and inflorescence in the early stages. A key to the species of the section *Fax* of the subgenus *Alpinia* from India is given for the identification of the closely related species.

Key to the species

- 1. Spike elongates considerably with age; bract, bracteoles and calyx pubescent; anther with distinct crest; capsule ovate *A. fax*
- 1. Spike remains unchanged with aging; bract, bracteoles and calyx glabrous; anther without crest; capsule spherical..... *A. abundiflora*

Indian specimens of *A. fax* show variation from Sri Lankan plants in the labellum with reddish purple lines radiating from the center, presence of a distinct anther crest and

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comparatively shorter anther lobe. Since these characters are highly variable, they are not enough for attributing any taxonomic rank.

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